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EXAMINER

TRAN, THUY V

| | |
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| ART UNIT | PAPER NUMBER |
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2821

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,977

Applicant(s)

ROSSI ET AL.

Examiner

Thuy V. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Response filed 05/22/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-36 and 40-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-36 and 40-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a reply to the Applicants' Response submitted on 05/22/2006. In virtue of this Response:

- Claims 1-21 and 37-39 have been canceled; and thus,
- Claims 22-36 and 40-50 remain pending in the instant application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 22-23, 27-28, and 45-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu (U.S. Patent No. 6,288,896).

With respect to claims 22 and 23, Hsu discloses, in Figs. 1-3, 7A, and 8, a system comprising (1) a display [18] and a lamp [90] to illuminate the display (see Fig. 8; col. 8, line 65 – col. 9, line 2; col. 12, lines 10-11), (2) a heat pipe [22, 30] (see Figs. 1-3 and 8) including a liquid (see col. 5, lines 55-58) capable of vaporizing coupled to the lamp [90] (see Fig. 8) to transfer heat from a heat-generating component [39] (see Fig. 1; col. 5, lines 5-6) of a system [10] to the lamp [90] in the display, wherein the heat pipe [22, 30] is (thermally) coupled to an end of the lamp, which is a second end of the lamp (see Fig. 7A regarding heat pipe [30] thermally coupled to an end of the lamp within panel [19] and transferring heat to the lamp [90]; see col. 9, lines 4-6).

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With respect to claim 27, Hsu discloses that the lamp [90] is a cold cathode fluorescent lamp (see col. 9, line 1).

With respect to claim 28, Hsu discloses that the heat-generating component [39] is a processor [39] (see col. 5, line 19) (which is one of a group comprising of a processor, a chipset, a graphics unit, and a memory controller as claimed).

With respect to claim 45, Hsu discloses that the heat-generating component [39] is included in a lid [14] of a mobile computer (see Fig. 1).

With respect to claim 46, Hsu discloses that the heat pipe [22, 30] comprises a flat heat pipe (see col. 2, line 60 – col. 3, line 3; col. 6, line 55).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 29-35 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Woo (Pub. No.: 2003/0132929 A1).

With respect to claim 29, Woo discloses, in Figs. 1-2, a system comprising (1) a display [160] and a lamp [150] to illuminate the display (se Fig. 1), (2) one heat generating component [110], (3) a transfer unit [130] to transfer heat from the heat generating component [110] to the lamp [150], and (4) a unit [120, 110, CPU (including [210, 220, 230, 240, 250] shown in Fig. 2)] (see Fig. 1; paragraphs [0019; 0020]) to control a level of heat provided to the lamp [150] to maintain a level of brightness generated by the lamp [150] (paragraphs [0024; 0025; 0026]).

With respect to claim 30, Woo discloses that the unit [120, temperature sensor (not shown)] (see Fig. 1; paragraphs [0019; 0020]) comprises a temperature sensor in the locality of the lamp [150] (see Fig. 1).

With respect to claim 31, Woo discloses that the level of heat provided to the lamp is controlled based on a measurement of electrical input power provided to the lamp (see paragraphs [0017; 0018]).

With respect to claim 32, Woo discloses, in Figs. 1-2, that the transfer unit comprises a heat pipe (either part, left or right, of 130; see Fig. 1) coupled to an end of the lamp (see Fig. 1).

With respect to claim 33, Woo discloses, in Figs. 1-2, that the heat pipe (either part, left or right, of 130; see Fig. 1) is coupled to a second end of the lamp.

With respect to claim 34, Woo discloses, in Figs. 1-2, that the system further comprises a heat block (box surrounding box [120] shown in Fig. 1) thermally coupled between the heat generating component [110] and the transfer unit [120, 130].

With respect to claim 35, Woo discloses, in line 4 of paragraph [0013], that the lamp [150] comprises a cold cathode fluorescent lamp, and in line 3 of paragraph [0019], that the heat-generating component [110] comprises a CPU, which is a processor as claimed.

With respect to claim 48, Woo discloses that the heat-generating component [110] is included in a lid of the system (see Fig. 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 24-26, 36, 40-44, 47, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. Patent No. 6,288,896) in view of Woo (Pub. No.: 2003/0132929 A1).

With respect to claims 24-26, Hsu discloses all of the claimed subject matter, as expressly recited in claim 22, except for a unit to control a level of electrical power input provided to the lamp based on a level of the heat transferred to the lamp from the heat generating component, wherein the unit comprises a temperature sensor in the locality of the lamp and uses a temperature of the temperature sensor to signal a power module to adjust the level of electrical power input.

Woo discloses, in Figs. 1-2, a system comprising a unit [210, 220, 230, 240, 250] (see Fig. 2) to control a level of electrical power input provided to the lamp based on a level of heat transferred to a lamp [150] (see Fig. 2) from a heat generating component [110] (see Fig. 1), wherein the unit comprises a temperature sensor [210] in the locality of the lamp and uses a temperature of the temperature sensor to signal a power module [220, 240, 250] to adjust the level of electrical power input.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Hsu by additionally configuring a unit as taught by Woo to enhance the operation efficiency of the display device since Woo teaches that such

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arrangement would reduce the power consumed by the lamp while maintaining the brightness of the lamp corresponding to a designed referenced temperature value (see paragraph [0040], lines 9-11).

With respect to claim 47, Hsu discloses all of the claimed subject matter, as expressly recited in claim 22, except for a unit to control a level of heat applied to the lamp to maintain a level of brightness generated by the lamp.

Woo discloses, in Figs. 1-2, a system comprising a unit [120, temperature sensor (not shown)] (see Fig. 1; paragraphs [0019; 0020]) to control a level of heat provided to a lamp [150] to maintain a level of brightness generated by the lamp [150] (paragraphs [0024; 0025; 0026; 0029, 0031]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Hsu by additionally configuring a unit as taught by Woo to effectively control the level of heat provided to the lamp and thus to enhance the operation efficiency of the display device since Woo teaches that such arrangement would reduce the power consumed by the lamp while maintaining the brightness of the lamp corresponding to a designed referenced temperature value (see paragraph [0040], lines 9-11).

With respect to claims 36 and 40-42, Hsu discloses, in Figs. 1-3, 7A, and 8, an apparatus comprising (1) one heat generating component [39] (see col. 5, lines 5-6), and (2) a transfer unit [22, 30] (see Fig. 1) to transfer heat from the heat generating component [39] to a lamp [90] (see Fig. 8) of a display, wherein the transfer unit comprises a heat pipe [22, 30] (see Figs. 1-3 and 8) including a liquid (see col. 5, lines 55-58) capable of vaporizing proximate the lamp [90] (see Fig. 8). Hsu does not teach (1) a fan or synthetic jet unit included in the transfer unit so as to

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generate air movement across the heat pipe and to have the heated airflow against the lamp, and (2) a unit to control a level of electrical power input provided to the lamp based on a level of the heat transferred to the lamp from the heat generating component, wherein the unit comprises a temperature sensor in the locality of the lamp and uses a temperature of the temperature sensor to signal a power module to adjust the level of electrical power input.

Woo discloses, in Figs. 1-2, a system comprising a transfer unit [120, 130] comprising a fan [120] to generate air movement across a heat pipe [130] and to have the heated airflow against a lamp [150], and a unit [210, 220, 230, 240, 250] (see Fig. 2) to control a level of electrical power input provided to the lamp based on a level of heat transferred to a lamp [150] (see Fig. 2) from a heat generating component [110] (see Fig. 1), wherein the unit comprises a temperature sensor [210] in the locality of the lamp and uses a temperature of the temperature sensor to signal a power module [220, 240, 250] to adjust the level of electrical power input.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Hsu by additionally configuring in the transfer unit of Hsu a fan as taught by Woo to enhance the operation efficiency of the display device since Woo teaches that such arrangement would provide an increase in ambient temperature around the lamp (see paragraph [0029], lines 6-7). Furthermore, to additionally configure in the display device of Hsu a unit as taught by Woo to increase the operation efficiency of the display device would have been deemed obvious to a person skilled in the art at the time of the invention since Woo teaches that such arrangement of the unit would reduce the power consumed by the lamp while maintaining the brightness of the lamp corresponding to a designed referenced temperature value (see paragraph [0040], lines 9-11).

With respect to claim 43, the combination of Hsu and Woo disclose that the lamp is a cold cathode fluorescent lamp (see Hsu; col. 9, line 1).

With respect to claim 44, the combination of Hsu and Woo disclose that the heat-generating component is a processor [39] (see Hsu; col. 5, line 19) (which is one of a group comprising of a processor, a chipset, a graphics unit, and a memory controller as claimed).

With respect to claim 49, the combination of Hsu and Woo disclose that the heat-generating component is included in a lid [14] of a mobile computer (see Fig. 1 of Hsu).

With respect to claim 50, the combination of Hsu and Woo disclose that the heat pipe comprises a flat heat pipe (see Hsu; col. 2, line 60 – col. 3, line 3; col. 6, line 55).

Remarks and conclusion

6. Applicants' arguments filed on 05/22/2006 have been fully considered but they are not persuasive.

In response to the Applicants' statement "In particular, Hsu does not teach or suggest that the heat pipe is coupled to an end of the lamp" in the fourth paragraph at page 6, with regard to the rejection of claim 22, it is noted that the Examiner does not agree. Hsu clearly discloses that the heat pipe [30] is positioned adjacent the display [18] and transfers heat thereto and specifically to the CCF backlight tube lamp [90] (see col. 9, lines 3-5) and shows in Fig. 8 that the heat pipe [30] is coupled to an end of the lamp [90]. Since the terms "coupled" and "an end" (of the lamp) are not clearly defined in the submitted specification, it is understood that such heat pipe [30] is coupled to an end of the lamp [90].

In response to the Applicants' statement "In particular, Woo does not teach or suggest a unit to control a level of heat provided to the lamp to maintain a level of brightness generated by

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the lamp” in the fifth paragraph at page 7, with regard to the rejection of claim 29, it is noted that the Examiner does not agree. Woo clearly discloses, in Figs. 1-2, a unit including [120, 110, CPU (including [210, 220, 230, 240, 250] shown in Fig. 2)] to control a level of heat provided to the lamp [150] to maintain a level of brightness generated by the lamp [150] (paragraphs [0024; 0025; 0026]). It is also noted that Woo impliedly teaches that the lamp brightness is a function of temperature surrounding the lamp (see paragraph [0018]).

In response to the Applicants’ statement “In particular, Hsu and Woo does not teach or suggest a fan or synthetic jet unit to generate air movement across the heat pipe and have the heated air flow against the lamp” in the sixth paragraph at page 8, with regard to the rejection of claim 36, it is noted that the Examiner does not agree. Woo clearly discloses, in Fig. 1, that the transfer unit [120, 130] comprises a fan [120] to generate air movement across the heat pipe [130] and has the heated air flow against the lamp [150].

In view of the foregoing, all claims 22-36 and 40-50 remain rejected. Specifically:

- Claims 22-23, 27-28, and 45-46 remain rejected as being anticipated by the teaching of Hsu;
- Claims 29-35 and 48 remain rejected as being anticipated by the teaching of Woo; and
- Claims 24-26, 36, 40-44, 47, and 49-50 remain rejected as being unpatentable over the combined teachings of Hsu and Woo.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

07/25/2006

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', written in a cursive style.

THUY V. TRAN
PRIMARY EXAMINER